**Abstracts**

**Objectives** Determine the incidence and prevalence of nasal colonisation of swine veterinarians with S. aureus in the USA, and quantify associations between risks of S. aureus colonisation and infection and exposure to pigs.

**Methods** 1) Cross-sectional survey of swine veterinarians regarding general occupational health and safety. 2) Longitudinal bacteriological testing (nasal swabs) of 68 veterinarians sampled monthly for 18 months for S. aureus and MRSA carriage. Isolates are characterised by using spa typing (eGenomics and Ridom spa servers) and multilocus sequence typing. The veterinarians work in most major pig producing states of across the USA. Concurrent assessment of intensity of pig exposure, occurrence of skin and soft injuries, occurrence of S. aureus infections, and use of PPE is made monthly via survey.

**Results** Across the first 4 months of bacteriological testing, prevalence of both S. aureus (60–70%) and MRSA (7–10%) were above expected levels in the USA population (30%, 3% respectively). Prevalence is significantly higher in veterinarians sampled within 48 hours of pig contact than after longer periods. Three spa types (539/t034; ST398; 2/t_unknown - ST 5; 1435/t337 - ST9 comprised 65% of all S. aureus isolates from swine veterinarians. The 3 spa/sequence types have been reported as ‘live-stock associated’ MRSA in Europe (ST398), Asia (ST9) and North America (ST5), but the majority of isolates from US veterinarians were methicillin sensitive (MSSA). Although minor skin injuries have been a frequent occurrence (5% cumulative incidence monthly), clinical infections with MRSA or MSSA have not yet been reported.

**Conclusions** Swine veterinarians in the USA are frequently culture positive for S. aureus variants that are common in swine. Many exposure events appear to result in only transient colonisation. To date, risk of clinical S.aureus infection in this group appears to be modest, despite widespread exposure to the organisms and a high incidence of opportunity for infection via skin wounds.

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**Objectives** Farm animals may serve as a reservoir for (multi) resistant bacteria, such as extended-spectrum beta-lactamase (ESBL) producing Enterobacteriaceae. Animal to man transmission may occur through (in)direct contact during work, which may thus pose an occupational health hazard. In humans, infections with ESBL producing Enterobacteriaceae are associated with high mortality, morbidity and costs. We investigated the prevalence of carriage with ESBL producing Enterobacteriaceae in pig farmers, their family members, and their employees and associations between presence of ESBLs among animals and humans.

**Methods** Rectal swabs were taken from pigs on 40 Dutch conventional pig farms (60 per farm) and stool samples were obtained from 142 humans living and/or working on 34 of these farms (farmers, family members and employees). Sampling was repeated after 6 months. Presence of ESBL-producing bacteria was determined by selective plating and ESBL genes were analysed by microarray analysis and gene sequencing. Questionnaires were used to determine antimicrobial use, hygiene, contact with animals and/or meat, and other relevant determinants. **Results** ESBL genes, mostly CTX-M-1, TEM-52 or CTX-M-14, were determined in pig isolates on 17 farms (43%) and in isolates from 8 participants (6%). ESBL genes determined in farmers corresponded to those detected in pigs on their farm. ESBL carriage was more likely in farmers working on ESBL positive farms (OR > 10). After 6 months ESBL genes were determined in isolates from 8 farmers (6%). Only 2 of these farmers carried ESBL genes in both stool samples obtained with a 6 months interval. **Conclusions** We found a strong association between ESBL carriage in farmers and ESBL occurrence on the farm. Repeated sampling indicates that ESBL carriage is not persistent in this human study population.